

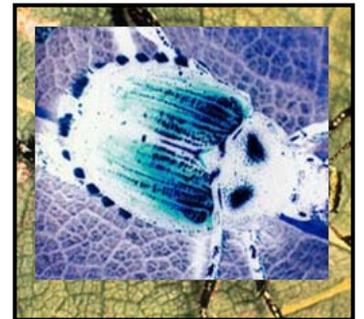
# Japanese Beetle – Utah

***Popillia japonica* Newman**

## Insect Infestation Mitigation

Clint Burfitt

Utah Department of Agriculture and Food



# Utah Japanese Beetle Program

## Exclusion, Detection, Eradication, Education

- Maintain effective quarantines and regulatory programs to prevent Japanese beetle from being introduced
- Conduct annual surveys to detect Japanese beetle introductions (+/- 3,000 traps/year)
- Eradicate any Japanese beetle infestations found
- Educate other state, federal, public, and private parties about Japanese beetle

# Outline

- Communication
- Tools
- 2007 Treatment Methods and Materials
- 2007 Trapping Results
- 2007 Population Data
- 2008 Treatment Program

# Utah Japanese Beetle Program Communication

- Utah State University Extension
- Utah Nursery and Landscaping Association
- Utah County Commissioners
- Orem City Mayor
- USDA APHIS PPQ
- Health Officials
- Research Entomologists
- Environmental Protection Agency
- Chemical / Biological Control Manufactures

Form Decision and Action Committee

- Develop Action Plan

# Utah Japanese Beetle Program

## Tools

- Funding
  - Emergency Insect Fund (Non-lapsing)
- Outreach
  - Public Affairs Officer
  - Orem City Neighborhoods in Action
- Treatment
  - Attorneys Generals Office
  - Utah Code Title 04 Chapter 35
    - Insect Infestation Emergency Control Act (declared May 9<sup>th</sup> 2007)
- Technology
  - Pheromones, Traps, Flora Lure
  - Pesticides
  - GIS Parcel Data

# Utah Japanese Beetle Program

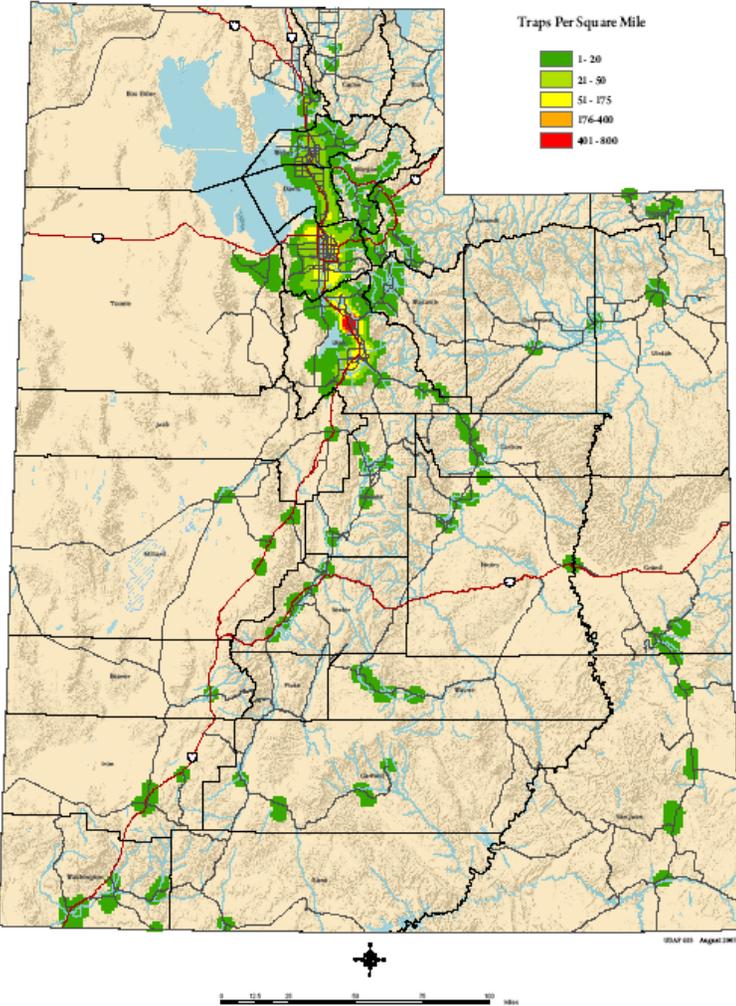
## 2007

- Four Pronged Approach
  - Containment
    - Alter Orem City Green Waste Program
    - Recommend Quarantine
  - Foliar Treatment Area
    - Tempo SC Ultra
    - Carbaryl
  - Turf Treatment
    - Merit 2F
    - Merit 0.2 G
  - Increase Trap Densities in Treatment Area

# Utah Japanese Beetle Program Trapping



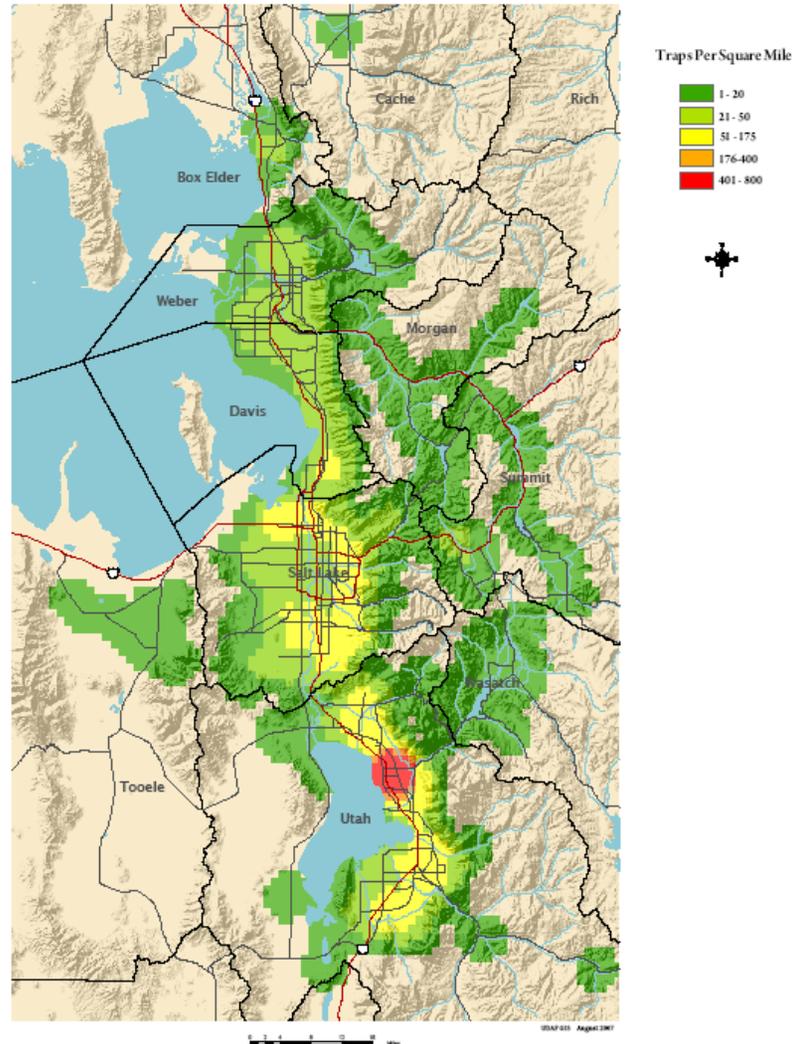
Utah Japanese Beetle Trap Density 2007



# Utah Japanese Beetle Program Trapping



Utah Wasatch Front Area  
Japanese Beetle Trap Density 2007



# Utah Japanese Beetle Program Trapping

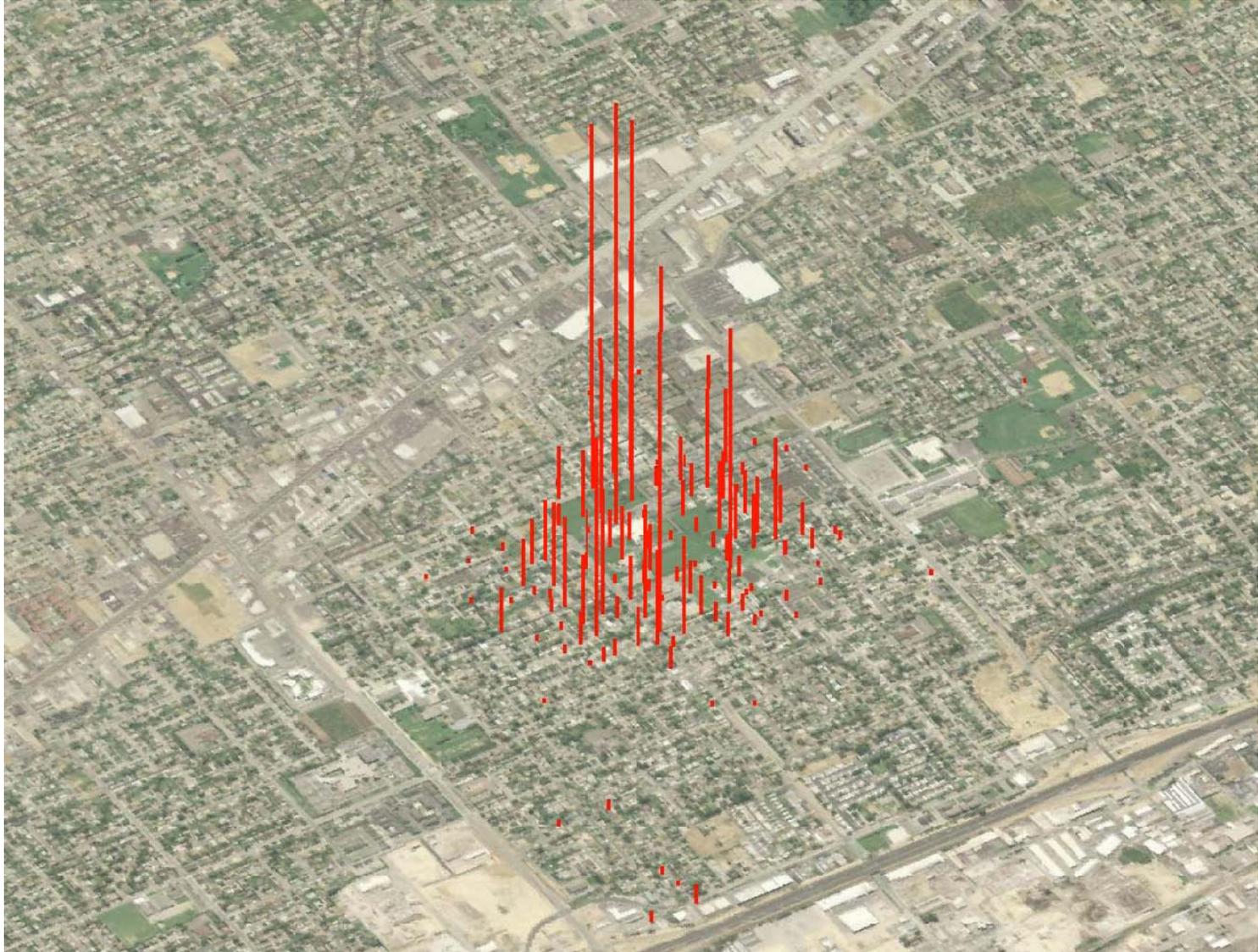
- Traps Statewide
  - 2006 – 581 Traps
  - 2007 – 3000 Traps
  - 416% Increase
- Traps in Utah County
  - 2006 – 199 Traps
  - 2007 – 1418 Traps
  - 613% Increase
- Delimiting Traps
  - 2006 – 100 Traps
  - 2007 – 700 Traps
  - 600% Increase

County	2006 Detection	2006 Delimiting	2007 Detection	2007 Delimiting
Beaver			1	
Box Elder	7		48	
Cache	8		42	
Carbon	3		12	
Daggett			8	
Davis	121		238	
Duchesne	1		3	
Emery	1		8	
Garfield			9	
Grand	7		24	
Iron			13	
Juab			2	
Kane			2	
Millard			10	
Morgan			24	
Rich	2		2	
Salt Lake	116		725	
San Juan	2		26	
Sanpete			9	
Sevier	6		12	
Summit			59	
Tooele			11	
Uintah	3		9	
Utah	99	100	718	700
Wasatch			27	
Washington	4		33	
Wayne	2		11	
Weber	99		214	
<b>Total</b>	<b>481</b>	<b>100</b>	<b>2300</b>	<b>700</b>

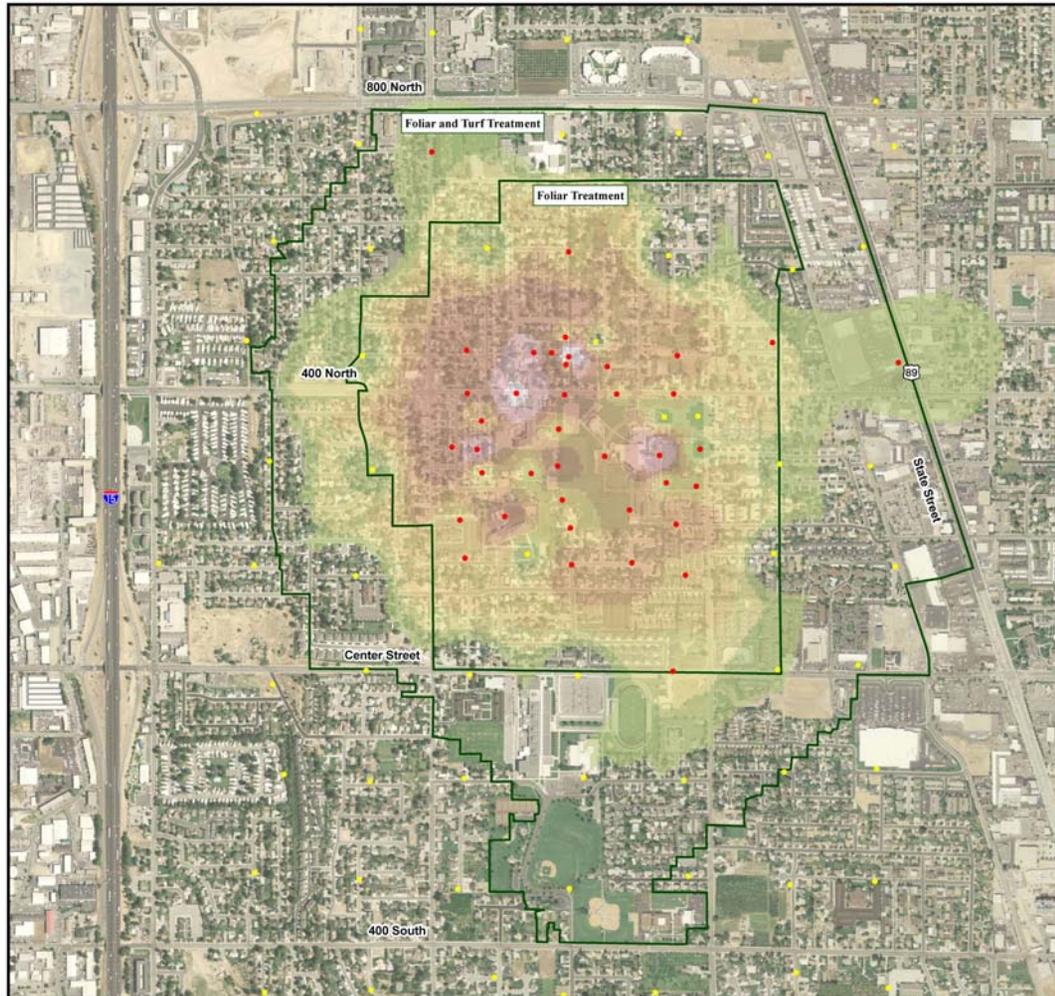
# Utah Japanese Beetle Program Trapping

- 2006 Total Catches – 675
- 2007 Total Catches – 2152
  - As of 9/13/07 (4 caught)
- First Positive Catch 2007
  - 6/14/07
- Orem Grid Checked Twice Weekly
- Other Utah County Traps Checked Monthly

# Utah Japanese Beetle Program Trapping



# Utah Japanese Beetle Program Trapping



IDW Analysis of Orem Japanese Beetle Catches  
2006

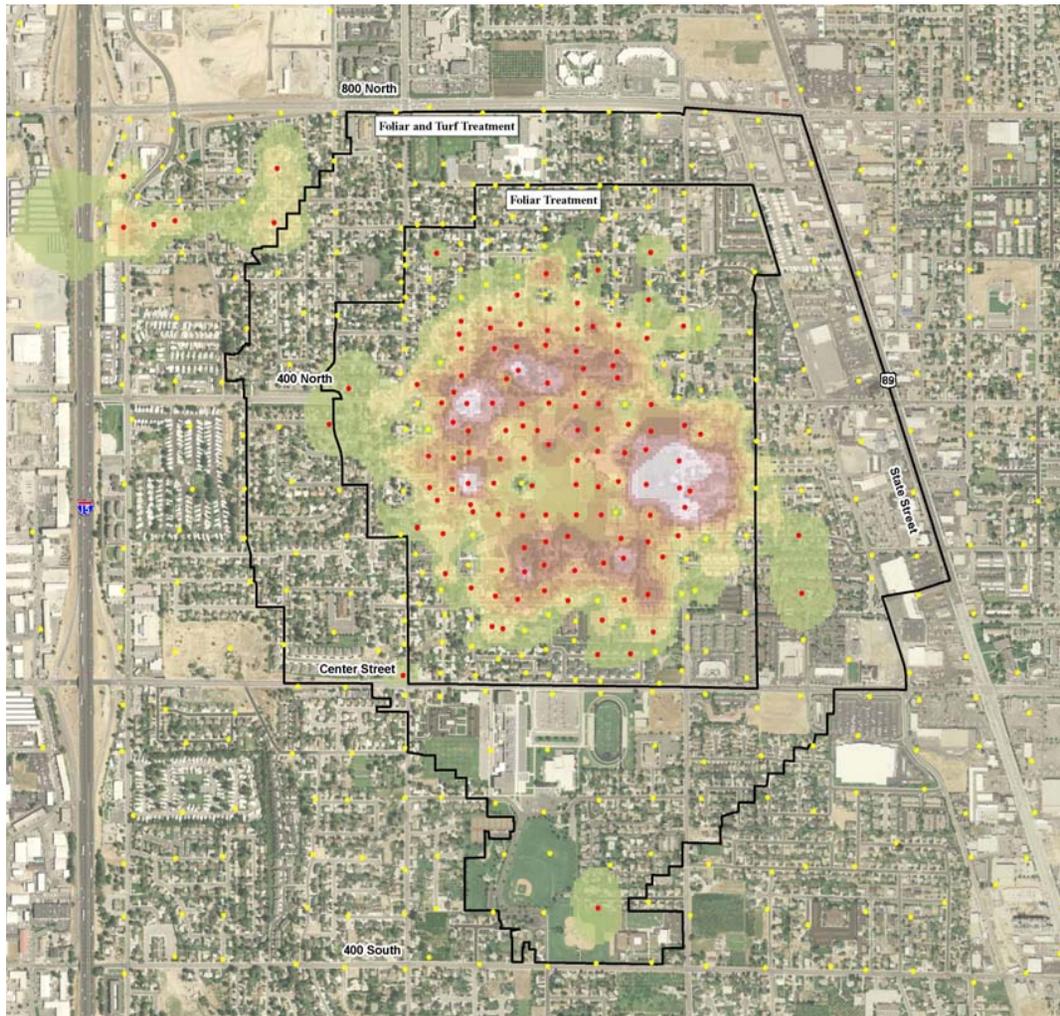
Predicted Number of Catches	Acres
1.01 - 2	156.20
2.01 - 4	96.77
4.01 - 8	110.48
8.01 - 16	92.43
16.01 - 32	52.39
32.01 - 64	11.66
64.01 - 136	1.53

• Traps with two or more catches  
• Traps with 0 or 1 catches



Map Scale 1:5,520  
1 inch = 460 feet

# Utah Japanese Beetle Program Trapping



IDW Analysis of Orem Japanese Beetle Catches  
as of 8/31/2007

Predicted Number of Catches	Acres
1.01 - 2	117.33
2.01 - 4	60.32
4.01 - 8	45.30
8.01 - 16	51.87
16.01 - 32	37.60
32.01 - 64	14.10
64.01 - 136	7.85

● Traps with two or more catches  
● Traps with 0 or 1 catches



Map Scale 1:5,520  
1 inch = 460 feet

# Utah Japanese Beetle Program Treatment

- Acres Treated
  - Turf ~ 480 acres
  - Foliar ~ 250 acres
- Treatment Dates
  - Turf Treatment - *Merit*
    - June 1-18<sup>th</sup>, and June 21<sup>st</sup>
  - Foliar Treatment – *Tempo/Carbaryl*
    - July 5-18<sup>th</sup>, and July 25<sup>th</sup>
  - Additional Turf Treatment with *Arena*
    - Aug. 10<sup>th</sup> ~ 5 acres



# Utah Japanese Beetle Program

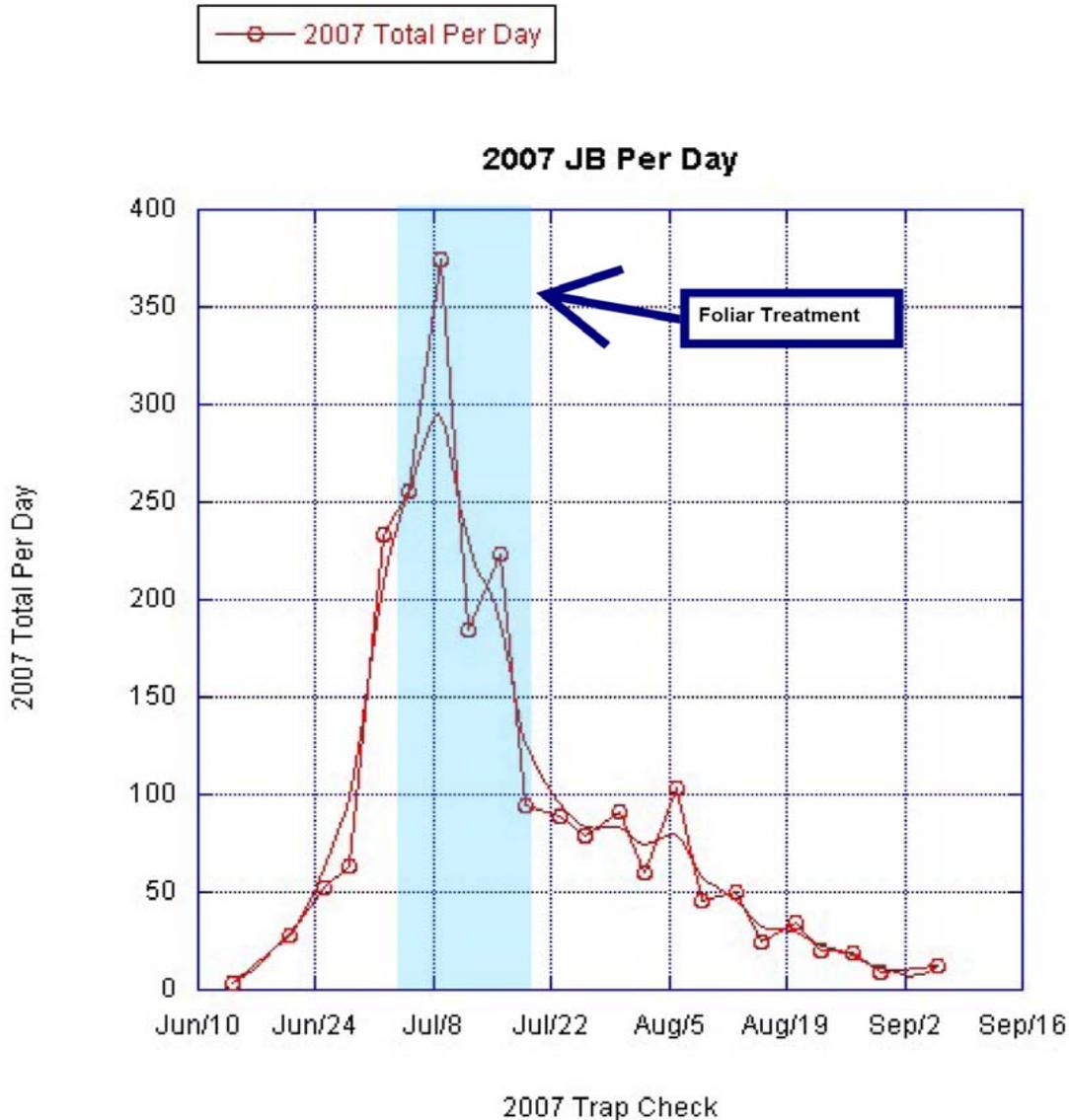
## Treatment

- Turf Treatment
  - *Merit*
    - 2200 residences
- Foliar Treatment
  - *Tempo*
    - 1200 residences
  - *Carbaryl*
    - 430 residences



# Preliminary Foliar Treatment Analysis

## Orem City Japanese Beetle Population



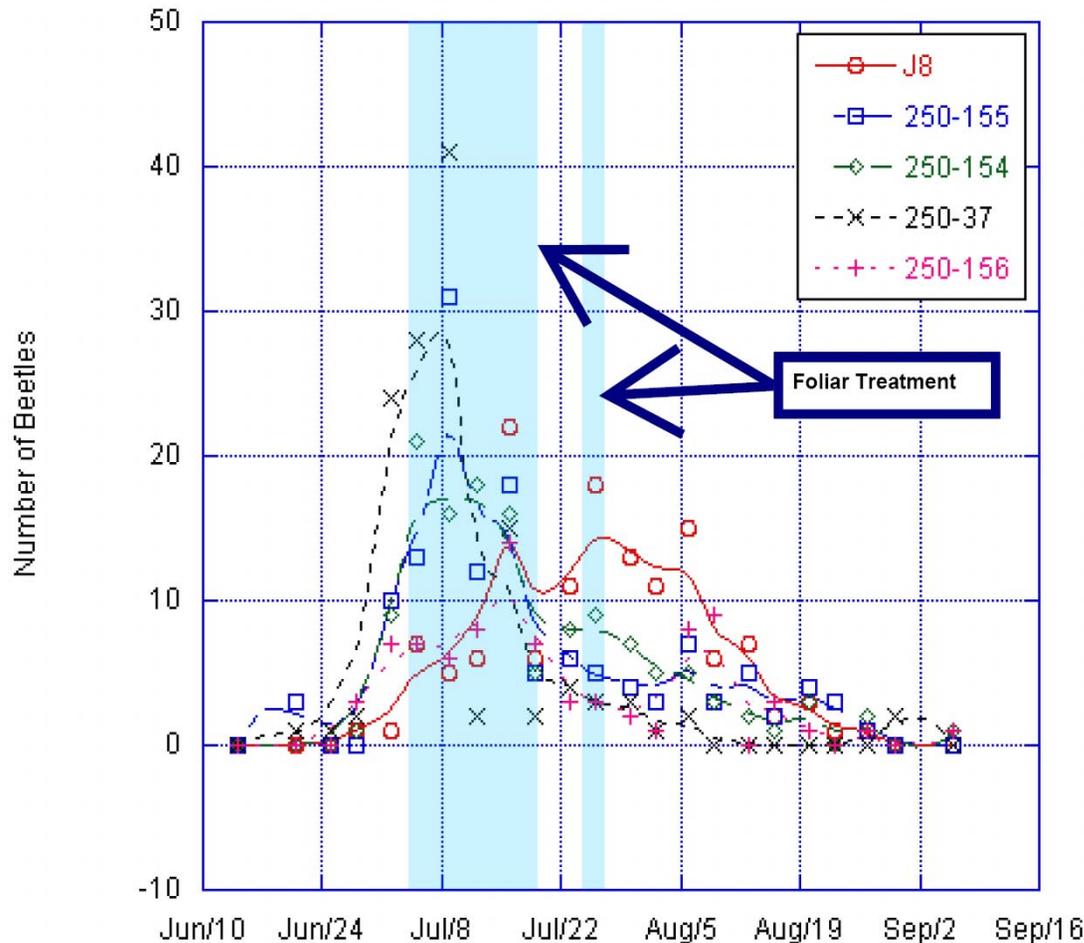
- Data points during the foliar treatment show a departure from the smooth curve fit.



# Preliminary Foliar Treatment Analysis

## Orem City Japanese Beetle Population

Top Five Trap Comparison



2007 Trap Check

- All traps show variance from the curve fit during and after the 1<sup>st</sup> and 2<sup>nd</sup> foliar applications.
- 250-37 shows the most departure from the curve fit during the 1<sup>st</sup> and 2<sup>nd</sup> foliar applications.
- J8 is the only trap to vary from the curve fit after the 3<sup>rd</sup> foliar application.

# 2008 Utah Japanese Beetle Program

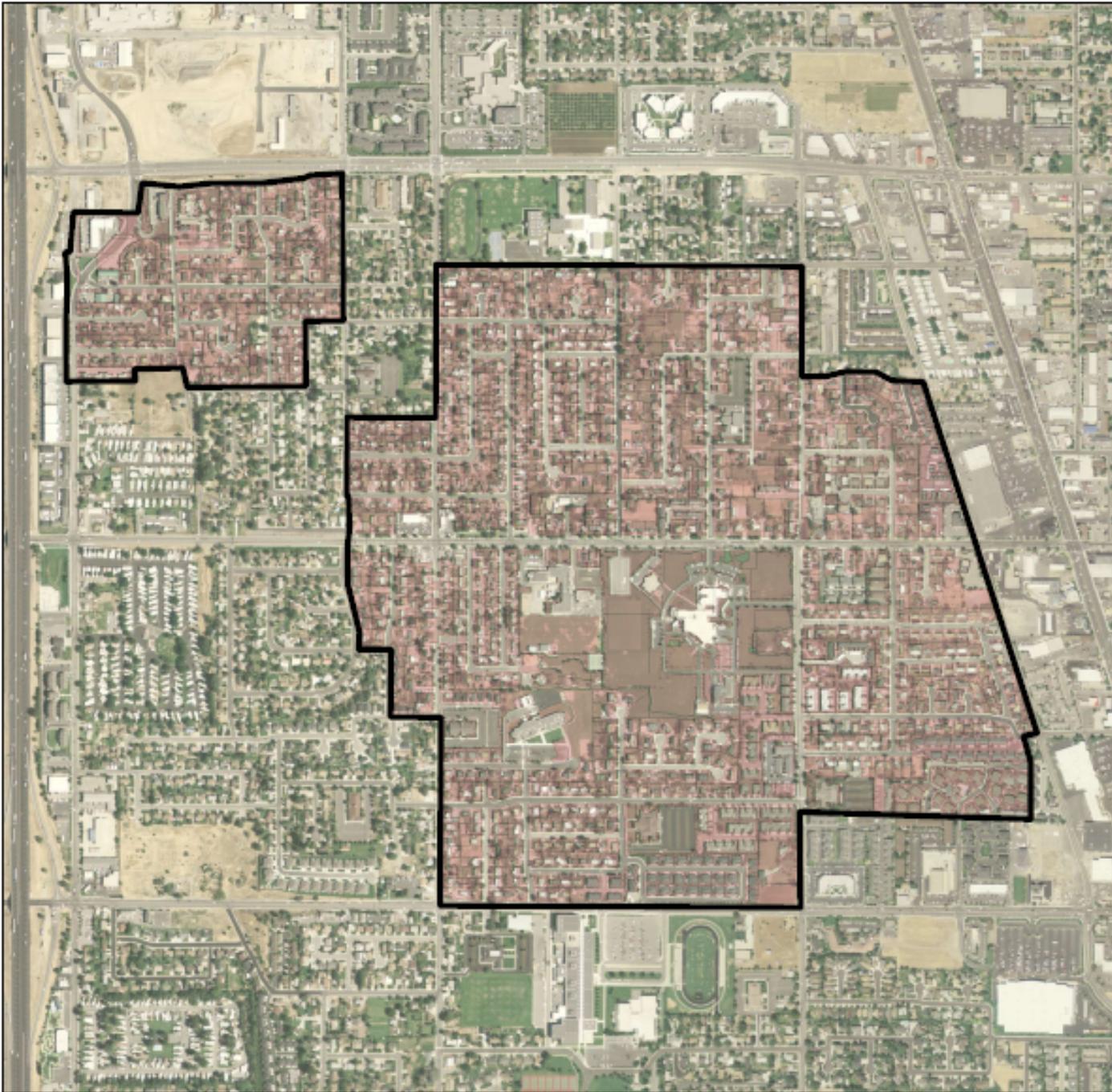
## Goals

- Formulate exit strategy.
- Communication
  - Clear message on gardening.
  - Direct inquiries to appropriate entities.
- Eradication
  - 2007 program and population data to be peer reviewed by JB experts.
  - Incorporate recommendations for 2008.
- Trapping
  - Increase delimiting traps in treatment area.
- Safety
  - Further educate personnel & public on pesticide safety.
  - Train and equip personnel to be prepared for public safety concerns.

Proposed 2008 JB  
Treatment Area  
12/03/2007

Treatment Area = 476 ac.

Treatable Areas Within  
Proposed Treatment Area = 267 ac.



# Questions??



Agricultural Communication Service file photo/Tom Campbell